

range finder. An instrument of this description, by Barr and Stroud, is shown in our illustrations. Three men are needed to work it. It depends on the principle of making a long base between two eyes, so that the angles between the two and the aircraft can be calculated. The obliging instrument simultaneously solves a trigonometrical problem and shows on an indicator the height above the ground at which the aeroplane is flying. The man in charge immediately reports by calling out to the officer in the command post near by, who is watching the aeroplane through binoculars, and he passes it on, with any corrections which he thinks desirable, to the team on the Predictor. Other illustrations show the front and rear faces of the marvellous Vickers Predictor. Given the height and range, this remarkable box sets its thinking machine to work, and calculates how far ahead of the aeroplane the gun must be aimed so that the shell and the raider may reach the same point at the same instant. The fuse in the nose of the shell is naturally set to explode at that instant. The connection between the Predictor and the gun is particularly ingenious. As soon as the instrument is satisfied, the result is electrically transmitted to pointers on dials at the gun, indicating the elevation and direction at

"Archie" turns his nose up: Two views of a 3 in. 20 cwt. gun, on high-angle mounting and semi-mobile platform, at Chelsea. (*Flight* photographs.)

